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AMERICAN JOURNAL OF PHARMACY
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SINCE 1825

THE

PHARMACOPŒIA

OF THE

UNITED STATES OF AMERICA

(THE UNITED STATES PHARMACOPŒIA)

TWELFTH REVISION

(U. S. P. XII)

BY AUTHORITY OF THE
UNITED STATES PHARMACOPŒIAL CONVENTION
MEETING AT WASHINGTON, D. C., MAY 14 AND 15, 1940

PREPARED BY THE COMMITTEE OF REVISION AND
PUBLISHED BY THE BOARD OF TRUSTEES

OFFICIAL FROM NOVEMBER 1, 1942

ELECTROTYPED, PRINTED AND BOUND BY
MACK PRINTING COMPANY
EASTON, PA.

The Title Page of the New Pharmacopœia.

See page 205.

JUNE
1942

May We Repeat This Announcement

OF VITAL IMPORTANCE

to every student who is contemplating applying for admission to the

Philadelphia College of Pharmacy and Science

in Pharmacy - Chemistry - Bacteriology or Biology

As one of the contributions of the institution and its Faculty to the national war effort, the Philadelphia College of Pharmacy and Science has adopted a plan of acceleration whereby students may complete the prescribed courses of study involving four academic years in a period of less than three calendar years.

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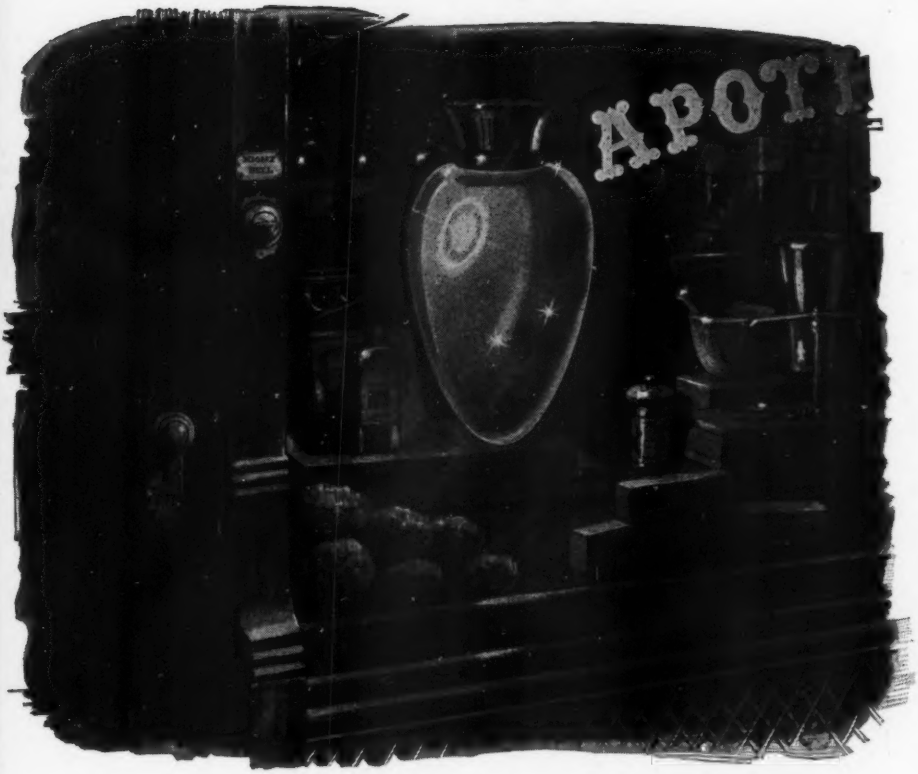

THE LAMP IN THE WINDOW

● Symbolic of the pharmacist's ability to serve was the LAMP IN THE WINDOW of another generation. Through the long dark night it burned steadily on, a beacon of encouragement to the distressed, a light of hope to the afflicted.

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AND THE SCIENCES SUPPORTING PUBLIC HEALTH

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Vol. 114. JUNE, 1942 No. 6

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Published monthly by the Philadelphia College of Pharmacy and Science 43rd Street, Kingsessing and Woodland Avenues, Philadelphia, Pa.

Annual Subscription, $3.00 **Foreign Postage, 25 Cents Extra**
Single Numbers, 30 Cents **Back Numbers, 50 Cents**

Entered as Second-Class Matter at the Post Office at Philadelphia, Pa. Under the Act of March 3, 1879

Acceptance for Mailing at Special Rate of Postage Provided for in Section 1103 Act of October 3, 1917. Authorized February 15, 1920

EDITORIALS

THE NEW UNITED STATES PHARMACOPŒIA.

IN this issue there will be found an article prepared by the Editor on the new drugs of the twelfth revision of the United States Pharmacopœia.

The task of revising and editing such an important standard text has grown to such proportions that few persons, not intimately acquainted with the problems and complexities of this program, fully appreciate the achievement represented when it is finally done.

The Pharmacopœia is the result of coordinated effort by every responsible group or organization concerned in the manufacture, distribution and use of medicinal agents in this country. It is well to remember that its faults and weaknesses, which are few and minor, are more than offset by the fact that it is organized and produced by democratic machinery wherein every person is free to have his own opinion and to express it.

It is inconceivable that any such organization might entirely escape criticism, even some quite heated and caustic. There is no reason to believe that the Pharmacopœia or its elected officials should be any more perfect than our Government and its leaders, and one only need read the papers to know that even these are constantly criticized. A certain amount of criticism is a good thing. In fact, without this criticism, Democracy soon would die. But there are many kinds of critics and in this writer's humble opinion many of those who have been most outspoken in their objections to the Pharmacopœia would, were they given power to act, quickly lead it to destruction, to be replaced by something far less democratic and quite unacceptable.

Examination of the new Pharmacopœia leads one to a most favorable opinion from the standpoint of its accuracy, utility and up-to-date therapeutics. Certain changes in policy are intimately connected with the improvement noted. For example, in the interest of representing as nearly as possible a *complete* collection of important therapeutic substances, the Pharmacopœia no longer excludes drugs controlled by patents on that basis alone. If the drug is outstanding

in its therapeutic merit and, provided no objection is made by the manufacturer, official recognition is given the product under a non-proprietary name. This is undoubtedly both in the interest of furthering modern therapeutics as well as to the advantage of the manufacturers concerned.

Take, for example, a drug like Hexylresorcinol, which is without equal as a safe and efficient anthelmintic. Even though this drug has been controlled by one company it would have been a great boon to the children of this country if the increased emphasis given by official recognition had come sooner. This writer knows that many physicians are still unaware of its existence as well as the fact that the Public Health Service has openly recommended it as the best drug for ascariasis. Similar circumstances might be described for many other drugs and the failure of the Pharmacopœia to include them definitely weakened its value and led to its being described as "a decade behind in therapeutics."

Another important change in the new Pharmacopœia is the inclusion of a long list of dosage forms. This was done in the interest of providing the physician with a proper and convenient dosage form for the important therapeutic substances recognized in the Pharmacopœia. The busy physician is handicapped when he desires to prescribe some drug and does not know the form in which it is best administered. With the dosage form listed in the Pharmacopœia and itself recognized, his prescribing can be better and more quickly carried out.

This policy on the part of the U. S. P. caused the National Formulary Committee no little concern and a great deal of bitter debate took place behind closed conference doors. The National Formulary, quite understandably, was chagrined to see many of their dosage forms which they had painstakingly developed taken "bag and baggage" into the U. S. P. On the other hand the U. S. P. firmly held that this was their prerogative since its right of priority and supersedence had long been recognized even by the National Formulary and that, furthermore, it was not possible for the National Formulary to increase its stature to the point of equal right of selection.

This seems to this writer to be perfectly sound reasoning since the U. S. P. was long established before the N. F. which was introduced in order to fill the need for formulas and preparations not in the Pharmacopœia. However, neither side of the argument seems

to have been presented without some prejudice nor without some resort to personal vituperation.

As one who is a member of neither group this writer has some sympathy for both but a far stronger realization that such internal disturbances are much better avoided. Our official books are unique in that they represent collective and coordinated effort with the co-operation but not the dictation of government. Unless this cooperative effort can continue to demonstrate responsibility and complete regard only for the public welfare it may, and easily could, become another function of government. It is inconceivable that even the most bitter critics in either group would prefer this. There is no reason why a friendly and mutually helpful solution to this problem might not be worked out. A solution which would not violate the right of priority of the U. S. P. nor try to stamp the N. F. as a therapeutic "ash-can" or a valueless book. It only requires cool heads and a proper recognition of the necessity of such action.

If scientifically trained men cannot make a democracy work what hope is there for its future as a "way of life"?

L. F. Tice

A GRADUATION DAY FAREWELL

The following brief address given to the 1942 graduates of the Philadelphia College of Pharmacy and Science by its president, Dr. Ivor Griffith, is presented here by the editor. Although written for a limited group, its beauty and philosophy have a universal appeal.

In tendering the President's benediction and farewell to the several divisions of the class of 1942, I find myself perturbed with conflicting emotions. You leave the halls of your Alma Mater and walk into a world of calamity, of crisis, and of crucifixion. For four years here, and other years elsewhere, you have been taught by your elders, by me, and by others like me, to search for the happiness that comes through service and through sweat, dedicating your dead-level best to the welfare of your fellow-man. You have been taught, and I trust you have learned, to be young people of gentle manners, distrustful of force, vigilant against violence, and loving and living in the ways of peace.

But you now go into a world at war and you cannot help but have an inevitable confusion of mind, and perhaps some hesitancy of action, seeing as you do the clinical performance of a so-called civilization seething and whirling in ungodly rage. But I must tell you this, namely, that it is well—perfectly well, to yearn for, and to dream of, peace, only that we must realize it as a practicality today that peace will not come unless a determined, militant, organized force be directed toward that end.

It is all very well for us to sound and to sing—"There'll be bluebirds over the white cliffs of Dover, tomorrow, just you wait and see!" But let me tell you that "waiting and seeing" is not enough to win the peace. We must get "tough" until victory is won. There'll be no bluebirds over the white cliffs of Dover, tomorrow, or any other time, unless there shall be, in the meantime, eagles—soaring eagles, glint-eyed, sharp-clawed, fierce eagles, over, not only the white cliffs of Dover, but elsewhere and everywhere in this foolish world.

The four freedoms shall never become universal until the world understands that they have to be earned and that victory can only come now with blood, toil, sweat and tears!

Yet, somehow, young people, I don't want to feel that my message need be altogether in terms of the militant, for with acknowledging that victory *will* come, and inevitably come, to disciplined democracy, I would like to leave with you also a few remarks that might have been spread over the minutes of a normal commencement exercise in quiet, happy—staid and steady, Philadelphia days.

One Monday morning, last January, a glum, slushy, mushy sort of morning, I rode through Fairmount Park over Strawberry Mansion bridge. At the west end of that wobbly old way across the Schuylkill, the snow lay heavy on the earth and the smaller trees were bent with ice crusts, weeping in the morning melt. There was no green on the ground nor any other sign of life and warmth, and the wind was whinnying through the park, sending an undecided snow to shroud my windshield. Then, all of a sudden, I saw a sign that bravely pointed to a clearing up the hill, and that little brown sign in the snow, though scarcely legible this morning, promptly sent its message to me, winging through the sordid, morbid morning, and this was its cheerful context—"To the Lilacs."

And gladly I thought, and gladly I said—"God Bless Thee little sign."

For because of it, I had seen, through that melting mantle of snow, the crocuses rehearsing their May Day performance, and tulips climbing their ladders of clay so that they might some day see the sun and spend their beauty for you and for me. In the depths of winter, and my heart weary with thinking of "man's inhumanity to man," that little brown sign had triggered new hope into my thinking. It made me *see* lilacs, *smell* lilacs, *expect* spring, in spite of snow and ice and bitter cold.

"Oh, wind, if winter comes can spring be far behind?"

Henceforth, young people, when I am dull and low and things around me seem glum and cold and difficult, obedient to my little sign, I shall hie me *"To the Lilacs."*

Then not far away from my little house is another sign to remember. It is a sign of graven stone set in the earth so many, many years ago, as the quaintness of its script suggests. It is a milestone on Old York Road and it points, as it *has pointed* these many years, to the City of Brotherly Love. It says, "Philadelphia, 9 Miles."

How like me and many others like me, thought I—a teacher loving my job all these long years. I am not much of a fellow myself, and I haven't gotten very far, but what a privilege I have had, what a rare privilege, to *point* the way to hundreds of young people so that some day they might head for, and *reach* the *City of Brotherly Love.* Certainly the old stone marker will never get to Philadelphia itself, but what a glorious point-the-right-way it has been for weary travelers these many decades!!

I have never seen the third sign about which I am thinking, but I have it on the authority of Dr. Sturmer that there is such a sign. The doctor tells me that it is outside of a little town somewhere in his beloved Indiana—a town which he describes as unique. Had Professor Dodge been beside me when I wrote this he might have at once, with his customary dissecting technique, romanticized on the origin of this word, *"unique,"* thus, *unus;* one, and, *equus;* the horse, and Dr. Sturmer's Indiana town might have been at once labeled "a one-horse town." But this town really was *unique,* and in the right sense of the word, for it had erected on its main concourse a truly memorable sign, a fine and challenging sign. In letters large enough for all to see, that sign proclaims: "This is Sturmerville, Indiana.

It is the center of the earth; *beginning from here, you can go anywhere.*"

What a wonderful sign that would be to have erected right in the foyer of your Alma Mater and mine, so that all who graduate might not forget that "beginning from here," with the right kind of ideas and ideals in practice, they achieve to the highest eminences, in service, in faith, and in love.

. . .

Young people, I bring the story of these three signs to carry my parting wishes to you.

Firstly, may you always have that kind of an intelligent optimism that even in your gloomiest gloom directs you—*"To the Lilacs!"*

Secondly, may I wish that you will do your share in pointing the way and bringing that day when the glowing fellowship of men at peace the whole world over will have at last become an achievement.

Thirdly, I charge you that the old motto "To the Stars Through Hope" is not sufficient. Much more truthful, much more timely, in my opinion, is the motto—"To the Stars Through Industry *and* Hope."

May you serve the world intelligently and well and so give your share to save it. I trust that each one of you if called away will return soundly, and safely, to a life where love and peace shall reign forever more.

My blessings go with you, everyone, wherever you go.

IVOR GRIFFITH

DETANNATING WINES FOR PHARMACEUTICAL USE

By Samuel L. Ross

FOR a good many years, and until 1926, when the National Formulary V was issued, medicated wines were official, and were frequently prescribed by the physician. The large list of these in N. F. IV included Wine of Antimony, Compound Wine of Orange, Wine of Beef, Wine of Beef and Iron, Wine of Colchicum Corm, Wine of Colchicum Seed, Wine of Iron, Bitter Wine of Iron, Wine of White Ash, Wine of Ipecac, Wine of Pepsin, Wine of Tar, Wine of Wild Cherry, Ferrated Wine of Wild Cherry, and Compound Wine of Rhubarb. All of the above were made with Sherry Wine.

These galenicals, some of which contained highly active substances, are no longer officially recognized, the Brussels Conference of 1902 having advised against them. The Pharmacopœia dismissed all the wines from the Ninth Revision. These medicinal wines were finally deleted altogether from N. F. V due to increased difficulty experienced by pharmacists in obtaining wine for manufacturing purposes. The N. F. Committee discarded all of the wines and substituted alcoholic solutions or tinctures. Alcohol conditions today warrant a reversal of that policy.

The use of sherry wine was continued by many of the pharmaceutical houses preparing certain types of specialties—e. g. so-called "tonics". Sherry Wine is described as a pale, yellowish-brown, or amber-colored liquid, having a pleasant aromatic odor and a fruity, characteristic taste without excessive sweetness or acidity. Its fine qualities of flavor and aroma lend themselves admirably as a base for various elixirs. It is employed extensively for the many elixirs of thiamine hydrochloride on the market. Based on an average alcohol content of 20 per cent. by volume, wine is proportionally much less expensive than alcohol. Then again, alcohol is more difficult to obtain these days because of priorities in war industries. Consequently, the importance of wine for pharmaceutical use is definitely increasing.

Some wines, including sherry, contain appreciable quantities of tannins which are considered to be incompatible with such substances as thiamin chloride, some iron salts, alkaloids, glucosides, and other

plant principles. Strangely enough, the literature is practically devoid of any information regarding the removal of tannins from wines.

One of the earliest references to the removal of tannins from an alcoholic preparation is found in the first edition of the National Formulary under Detannated Tincture of Cinchona. Freshly precipitated ferric hydroxide is the agent employed and is made by the interaction of Solution of Ferric Sulfate and Ammonia Water. The Fluidextract of Cinchona is mixed with the alcohol and then the ferric hydroxide is added. The mixture is agitated frequently until the tincture is deprived of tannin, which may be known by the absence of a blackish-green color when a small portion of the clear tincture is treated with a drop or two of Tincture of Ferric Chloride. Although the first edition of the National Formulary, published in 1888, gave a method for removing tannins with ferric hydroxide, the author found a patent issued in May, 1938 (U. S. 2,118,049) to C. G. Lehr "for removing tannins and similar astringent substances from beverages such as whiskey or brandy or medicines such as tincture of digitalis by a precipitated metal hydroxide such as ferric hydroxide."

A common procedure today for detannating wines is to use skimmed milk which was originally employed as a clarifying agent for wines (1). The method, passed on to the author by L. M. Roeg (2) was as follows: "6¼ Pints of skimmed milk are added slowly to 50 gallons of wine, while rapidly stirring. Continue the stirring for about 10 minutes. Then allow to stand undisturbed for a few days. The formed insoluble casein tannate settles. To determine if the wine requires more skimmed milk, add a few drops of Tincture of Ferric Chloride to a filtered sample of the treated wine; it should not darken."

In practice, the above produced a clear wine free from tannins. Nevertheless, the use of skimmed milk presented a number of objections. It caused an undesirable dilution of the wine and lowering of the alcoholic strength, thus necessitating fortification with alcohol and increasing the cost. Also, the milk left some dissolved material which could be the cause of incompatibilities or even serve as a food for undesirable bacteria and molds. In addition, too long a period was required for aging and complete precipitation when skimmed milk was used.

Searching for a better agent to detannate sherry wine, the author experimented with a commercially pure, granular casein (*Casein Merck, Technical). In the form in which it is supplied, the casein does not remove the tannins efficiently. To improve its activity, the author prepared a freshly precipitated casein by dissolving the commercial product with ammonia and the aid of heat, then precipitating in the cold with hydrochloric acid. The resulting masses were broken up into small particles which were washed thoroughly on a cloth strainer, allowed to dry somewhat and then broken down more finely by passing through granulating screens. Two to three pounds of this freshly precipitated casein detannated 100 gallons of sherry wine. The only remaining objections were the time involved in the preparation of the casein, and the time still required for aging and complete precipitation.

Over a year ago the writer was carrying on some experiments in chromatographic adsorption analysis in which he used some activated charcoal (Darco G-60). From observations that the more thoroughly detannated wines were paler in color, the author was led to try the activated charcoal which is considered a good decolorizer. The resulting detannation was surprisingly efficient, as well as simple and non-time consuming, producing a detannated wine with sparkling clarity.

The author investigated several types of charcoals which are listed in the order of their detannating efficiency as found in the writer's laboratory—**Darco G-60, Activated Charcoal U. S. P. Merck, Darco Granular 20 x 40, Darco S-51, Purified Animal Charcoal N. F. VI (unknown source), Bone Black (J. T. Baker), and Hydrodarco.

The samples were tested by adding four grains of the charcoal to a four-ounce bottle of sherry wine and inverting the bottle slowly twenty times. Comparing the filtered treated samples with regard to decolorization and reaction with Ferric Chloride Test Solution, the conclusion was reached that all the charcoals (even those which were not activated) adsorbed tannins and color, in varying degrees. The tannin and color remaining in the treated wines were also determined by a method given in the A. O. A. C. (3).

*Furnished through the courtesy of Merck & Co., Inc., Rahway, N. J.

** Darco samples furnished through the courtesy of Darco Corporation, New York, N. Y.

Darco G-60 met all the tests for Activated Charcoal U. S. P. XI, and was found the most suitable agent for carrying out the detannations. Other well known commercial activated charcoals are sold under the trade names of Nuchar, Norit and Carboraffin. In water, some of these materials are acid, while others are alkaline.

From the standpoint of purity, availability, cost and convenience, Activated Charcoal U. S. P. represents the ideal agent for detannating wines. Also, no time is needed for aging once the treated wine is filtered. The simplest procedure to follow is to stir the wine with a paddle or suitable mechanical stirrer, while slowly adding the charcoal, using about one grain to each fluid ounce, or about two pounds of Activated Charcoal to 100 gallons of wine. Continue the stirring for fifteen to thirty minutes, and in such a manner that all parts of the liquid come in contact with the carbon. Longer mixing may be required in the case of larger quantities of wine, or when the agitation is not thorough. The wine is then filtered, using some filter aid such as Filter-Cel, or Dicalite.

By using a sufficient amount of the charcoal, it is possible to remove from the wine all color, odor, tannin and suspended matter, leaving only alcohol, water, acid and sugar (4, 5). Carelessness in determining the quantity of activated carbon to use will result in the loss of the desirable natural bouquet of the wine. Some experimentation by the operator is necessary in order to remove the tannin without the removal of other. Continual checks on the wine, before and after the detannation, showed only insignificant losses of alcohol.

Summary

1. The use of wines in pharmaceuticals is discussed.

2. A method for detannating alcoholic preparations with freshly precipitated ferric hydroxide is reviewed.

3. The use and disadvantages of skimmed milk as a detannating agent are discussed.

4. Freshly precipitated casein is introduced by the author for removing tannins from wine.

5. The author advocates a new use for Activated Charcoal U. S. P.—to remove tannins from wine economically, expeditiously and safely. A procedure is given.

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OUR CONTRIBUTORS THIS MONTH

James A. Bone, M. Sc., M. D., is Professor of Pharmacology at Meharry Medical College, Nashville, Tennessee.

Ivor Griffith, Ph. M., D. Sc., F. R. S. A., the former editor of this Journal, is well known to its readers. Dr. Griffith now serves as President of the Philadelphia College of Pharmacy and Science, is a member of the Pennsylvania State Board of Health and is active in many ways in the service of pharmacy and public health.

T. Swann Harding again this month has written one of his historical sketches relative to the origin, growth and development of the Patent Office and the Department of Agriculture. Mr. Harding is Senior Information Specialist assigned to the "Food for Freedom" Program.

Samuel L. Ross, Phm. B., B. Sc., M. Sc., graduated from the University of Toronto and later studied at the Philadelphia College of Pharmacy and Science. At present he is chief chemist of Hance Bros. & White Co., pharmaceutical chemists, in Philadelphia.

THE NEW DRUGS OF THE U. S. P. XII

By L. F. Tice

The following article has been prepared in order to provide some much-needed information concerning the new drugs of the U. S. P. XII. Many of these drugs are known under proprietary names and wherever possible these proprietary names are given in order that they may be correlated with the official title. A considerable amount of the material presented will not be found in the U. S. P. text and it has been gathered from various sources not generally available to the pharmacist and physician.

SINCE the last Supplement to the U. S. P. XI was issued certain drugs have been adopted by interim revision in order to meet an immediate need for such official recognition. These drugs, although in the U. S. P. XII, are not listed as *additions,* inasmuch as technically they are already official. They are as follows:

Oleovitamin A and D

The product is official as a cod liver oil substitute. Its vitamin A and D content is the minimum required for Cod Liver Oil U. S. P., namely 850-1100 units A/Gm. and 85-110 units D/Gm., but it is prepared by adding vitamins or concentrates to either a fish liver or vegetable oil until it possesses the required vitamin potency. The shortage of cod liver oil and its rise in price makes such a product particularly applicable for low income families and institutional use. The dose is the same as that for cod liver oil.

Insulin Injection

With the expiration of the patents on insulin some immediate control of this product was most essential. The adoption of insulin by the U. S. P. prevented what might have been a chaotic situation without adequate control of this drug. In almost every respect the specifications are identical with those formerly required by the Insulin Committee of the University of Toronto.

Oil of Cedar Leaf

This volatile oil was recognized to replace Oil of Lavender in all official preparations used externally, Oil of Lavender being in very short supply.

Persic Oil

This is a fixed oil obtained from either peach or apricot kernels. It is quite analogous to Expressed Oil of Almond which is in short supply. It is recognized officially to replace Expressed Oil of Almond in Ointment of Rose Water.

ADDITIONS TO THE U. S. P. XII

The very extensive list of new monographs in the U. S. P. XII is due to the addition of a rather comprehensive list of therapeutic substances as well as the new policy of recognizing some suitable dosage form for each therapeutically useful drug. Thus one finds a long list of Tablets, Capsules, Injections, etc., which need little comment inasmuch as the basic drug contained in such a preparation is, if new to the Pharmacopœia, discussed at that place in the manuscript. At the end of this paper will be found a complete list of U. S. P. XII additions. An abbreviated list of only those substances classified as new drugs follows with certain pertinent information concerning each. It is hoped that these facts will be of some value to the busy pharmacist and physician by giving to him a condensed discussion of the names, properties, uses and dosage of the many new items in the forthcoming revision of the Pharmacopœia.

Acidum Aminoaceticum

Aminoacetic Acid. Known also as glycine and glycocoll. This is a white, odorless, crystalline powder possessing a sweetish taste. It is freely soluble in water. It has been shown to exert an appreciable effect on muscle creatine retention in myasthenia gravis and pseudohypertrophic muscular dystrophy. The dose is 15-30 Gm. daily in some palatable vehicle or milk.

Aethylis Carbamas

Ethyl Carbamate (Urethane). This is recognized as a pharmaceutical necessity and used in making *Injection of Quinine Hydrochloride and Ethyl Carbamate.* It increases the solubility of the quinine salt and results in a neutral solution. The injection is employed as a sclerosing solution in the treatment of varicose veins.

Amaranthum

Amaranth. Known technically as F. D. & C. Red No. 2. This is a reddish-brown powder giving a magenta-red aqueous solution. It is recognized as a red dye for official preparations, e. g. *Elixir of*

Phenobarbital, in place of cudbear. A 1 per cent. solution is also official under the title *Liquor Amaranthi.*

Amyleni Hydras

Amylene Hydrate (Tertiary Amyl Alcohol). A colorless volatile liquid with a comphoraceous odor and burning taste. One gram is soluble in 8 cc. of water. It is used as a solvent in preparing *Liquor Tribromoethanolis U. S. P. XII.*

Aqua pro Injectione

Water for Injection is water which has been *suitably* distilled and sterilized within twenty-four hours. It is distilled, sterilized and stored in suitable sterile containers so that it is free and remains free from pyrogens. The official text gives a test for pyrogens which is based on the observable rise in body temperature when a given volume is injected intravenously in a series of rabbits. This product is required in preparing all aqueous solution intended for parenteral use.

Bentonitum

Bentonite ("Wilkinite") is colloidal, native, hydrated aluminum silicate. It occurs as a practically colorless powder or as small granules. Bentonite is insoluble in water but it swells to about eight times its volume when added to water and produces an opalescent suspension or gel. This property is greatly increased by the addition of alkaline substances such as magnesium oxide. It is recognized officially as a suspending agent to be used in preparing Chalk Mixture according to a new formula for this preparation in the U. S. P. XII.

Butacainae Sulfas

Butacaine Sulfate. This is sold by Abbott as "Butyn Sulfate." It is a white, odorless, crystalline powder, soluble in water, and acts as a local anesthetic similar to cocaine in that it is effective both when applied topically as well as when injected. It is generally employed in 1-2 per cent. solution and is quite satisfactory for use in the eye.

Butylis Aminobenzoas

Butyl Aminobenzoate *n* Butyl *p*-aminobenzoate. This is likewise sold by Abbott as "Butesin." It is a homologue of "Benzocaine" or "Anesthesin" and it is used in the same manner, i. e., topically as a dry powder or in ointment form or oil solution since it is not soluble in water. It is claimed to be more effective than the ethyl derivative in its anesthetic action.

Calcii Mandelas

Calcium Mandelate. This occurs as a white, odorless powder, slightly soluble in cold water, and insoluble in alcohol. It is non-hygroscopic and almost tasteless. It is used in treating infections of the urinary tract as are other salts of mandelic acid. Since mandelic acid is non-metabolizable it is excreted unchanged and it lowers the pH of the urine to such a degree that it becomes bacteriostatic or bactericidal. Ammonium chloride and nitrate are sometimes prescribed with it as synergists. In employing this therapy fluid intake should be restricted to 1200 cc. daily and the pH of the urine should be regularly determined in order to evaluate the effectiveness of the drug. The average dose is 4 Gm. This drug is sold by Abbott as "Camdelate Tablets."

Calx Sodica

Soda Lime. This is a mixture of calcium hydroxide and sodium or potassium hydroxide or both with varying amounts of water. It is a white or grayish white granular solid and is employed as an absorbent of CO_2 in basal metabolism studies, in rebreathing anesthesia machines, etc.

Carbarsonum

Carbarsone. Chemically this is *p* carbamido-phenylarsonic acid. It contains 28.5 per cent. of arsenic in pentavalent form and it is used both orally and in the form of retention enemas (2 Gm. in 200 cc. 2 per cent. $NaHCO_3$) in the treatment of amebic dysentery. The dose is 0.2 Gm. It has also been used locally in the treatment of Trichomonas vaginitis. Lilly at present supply this product in the form of powder, capsules and vaginal suppositories.

Carbasus Absorbens

Absorbent Gauze (Gauze, Plain Gauze, Non-sterilized Absorbent Gauze). This is recognized in distinction to *Sterile Absorbent Gauze,* which see.

Carbasus Absorbens Adhaesivus

Adhesive Absorbent Gauze (Adhesive Absorbent Compress). This is an individual dressing prepared by affixing a plain absorbent compress to a strip of adhesive plaster. It must be sterile and be protected from contamination by suitable packaging. Johnson and Johnson's "Band-Aid" is representative of this type of product.

Carbasus Absorbens Sterilis

Sterile Absorbent Gauze (Sterile Gauze). This is absorbent gauze which has been rendered sterile and protected from contamination. It may be supplied in various lengths and widths and in the form of rolls or folded shapes.

Chloroazodinum

Chloroazodin. This is an organic chlorine compound containing 37.5-39.5 per cent. of active chlorine. It occurs as bright yellow needles or flakes and has a faint odor suggestive of chlorine and a slightly burning taste. It is only very slightly soluble in water and slightly soluble in glycerin and triacetin. The uses of this product are similar to those of chloramine and the hypochlorites except that it is claimed to be more effective in the presence of organic matter. A solution of chloroazodin is also recognized officially as *Liquor Chloroazodinum*. Wallace & Tiernan Prod. Co. of Belleville, N. J., supply this substance in various forms under the trade name "Azochloramide."

Chorda Serica Chirurgicalis

Surgical Silk (Silk Sutures). It consists of the thread prepared from the cocoon filaments secreted or spun by the mulberry silkworm. They may be white or dyed with any approved color. It can be sterilized repeatedly without deterioration by moistening the strands slightly with water and exposing them immediately to steam at 121°C. for thirty minutes.

Chorda Serica Chirurgicalis Sterilis

Sterile Surgical Silk (Sterile Silk Sutures). It is surgical silk which has been rendered sterile and protected from contamination by suitable packaging. Each strand should be in an individual sealed glass tube or other container in which the strand shall be sterilized.

Dihydromorphinoni Hydrochloridum

Dihydromorphinone Hydrochloride. This is commonly known under the name "Dilaudid" which is the proprietary name controlled by E. Bilhuber Inc. of Orange, N. J. It differs from morphine in that the secondary alcohol group has been changed to a ketone and an adjacent double bond removed by hydrogenation. It occurs as a fine white odorless crystalline powder which is affected by light, and is soluble to the extent of about 1 Gm. in 3 cc. of water. Its pharmacologic action is similar to that of morphine in relieving pain but it is

less nauseating, less constipating and causes less depression of respiration. It is more powerful than morphine in its effects and only about one-fifth the dosage of morphine is required, the average dose being 2 mg.

Diphenylhydantoinum Sodicum

Diphenylhydantoin Sodium. This is available under the name "Dilantin Sodium" and is distributed by Parke Davis & Co. It is a white, odorless powder, somewhat hygroscopic on exposure to air, absorbing CO_2 at the same time causing the liberation of diphenylhydantoin. It is employed as an anticonvulsant particularly in the treatment of epilepsy. Many physicians have found it highly useful in the treatment of epilepsy, replacing the barbiturates and bromides which at times produce disagreeable side reactions. The average dose is 0.1 Gm. with at least half a glass of water, usually given three times a day. Capsules of this drug are also official.

Emplastrum Adhaesivum Sterile

Sterile Adhesive Plaster (Sterile Adhesive Tape). It is adhesive tape which is sterile and so packaged as to prevent contamination.

Ergonovinae Maleas

Ergonovine Maleate. Ergonovine is the water soluble alkaloid of ergot also known as *ergostetrine* and *ergobasine*. It is most stable in the form of the maleate. It is effective as an oxytocic when given orally, exerting a very prompt action and not producing as many undesirable side reactions such as the effect on blood pressure, etc., as are caused by other ergot principles.

The dose is 0.5 mg. and tablets are also official.

Lilly supply this product as "Ergotrate Tablets," Burroughs Wellcome as Ergometrine, and Sandoz supply Ergonovine Tartrate Tablets as "Basergin Tablets."

Ergotaminae Tartras

Ergotamine Tartrate. This is the tartrate of ergotamine, an alkaloid obtained from ergot. It is used as a uterine stimulant in both post-partum and post-abortal hemorrhage and also in the treatment of migraine. Tablets are also official in the U. S. P. XII. Sandoz supplies this product under the name "Gynergen." The dose is 0.5 mg.

Estradiolis Benzoas

Estradiol Benzoate. Estradiol is the most potent of all the estrogens, only 0.015 microgram being equivalent to one Interna-

tional Unit. The estradiol is administered by mouth and the benzoate usually is given in oil solution by intramuscular injection.

Estradiol Benzoate in oil solution is available from Schering Corp. under the name "Progynon-B" and from Roche-Organon as "Dimenformon Benzoate."

Estronum

Estrone (Theelin). This is also an estrogen, 0.1 microgram being equal to one International Unit. It is only slightly soluble in water but is somewhat soluble in oil. It is usually administered intramuscularly in the treatment of the various conditions suggesting estrogen therapy such as ovarian hypofunction, menopause, and gonorrheal vaginitis in children.

Eucatropinae Hydrochloridum

Eucatropine Hydrochloride. This was originally introduced by Schering-Kahlbaum as "Euphthalmine Hydrochloride" under which name it is now available from the Werner Drug Co. of Cincinnati, Ohio. It is a white, granular, odorless powder which is very soluble in water. It is employed in 5-10 per cent. solution to dilate the pupil for ophthalmoscopic examinations. It differs from atropine in that it does not produce paralysis of accommodation and its action is rapid and brief in duration.

Extractum Perpolitionum Oryzae

Extract of Rice Polishings (Extract of Tikitiki, Extract of Rice Bran, Extracto de Salvado). This was recognized at the request of the Government of the Philippines as a cheap source of vitamin B_1. It is a dark brown, viscous liquid, having the odor of burnt sugar and a sweetish taste. It is required to contain in each cc. not less than 20 U. S. P. Units of Vitamin B_1. The Vitab Corporation supply this product with a B_1 level far above the U. S. P. requirement.

Ferri Sulfas Exsiccatus

Exsiccated Ferrous Sulfate. This is a grayish white powder suitable for tablet, capsule and pill manufacture. Ferrous sulfate as a hematinic is now back in medical favor. The dose is 0.3 Gm. Tablets are officially recognized.

Gelatum Alumini Hydroxidi

Aluminum Hydroxide Gel (Colloidal Aluminum Hydroxide). It is a white viscous suspension which is translucent in thin layers. It contains the equivalent of not less than 3.6 per cent. and not more than 4.4 per cent. of Al_2O_3. Oil of peppermint, glycerin, sucrose or

saccharin may be added. Sodium benzoate as a preservative is permitted in amounts not exceeding 0.5 per cent. It is prescribed as an adsorbent and antacid, acting also as a protective for inflamed or ulcerated areas of the gastro-intestinal tract. It may possess some slightly constipating action. The average dose is 8 cc.

This product is analogous to "Amphogel" as prepared by John Wyeth & Bro., Inc.

Gelatum Alumini Hydroxidi Siccum

Dried Aluminum Hydroxide Gel. It is a white odorless tasteless amorphous powder. It is insoluble in water and is administered either suspended in milk or in tablet form. The dose is 0.6 Gm. Such a product in tablet form is sold by John Wyeth & Bro., Inc., as "Amphogel Tablets."

Globulinum Immune Humanum

Human Immune Globulin (Measles Prophylactic, Placental Extract). This is a sterile solution of globulins with their accompanying antibodies as obtained from the placental tissue expelled by healthy human mothers. It is used for both the modification and the prevention of measles. In most cases modification is preferred since, even if the case is only very mild, it confers active immunity for a long period, whereas the passive immunity obtained by the appropriate use of the globulin is only of short duration.

The average intramuscular dose (which should be properly adjusted on the basis of the time of exposure) is

For Prevention—2-5 cc.
For Modification—2-10 cc.

Glycerylis Triacetas

Glyceryl Triacetate (Triacetin). A colorless, somewhat oily liquid with a slight, fatty odor and a bitter taste. It is soluble in water and miscible with alcohol.

This is recognized as a solvent for *Chloroazodinum,* which solution may be used directly on wounds or diluted with olive oil. See *Liquor Chloroazodini.*

Hexylresorcinol

Hexylresorcinol. Occurs as white, needle-shaped crystals having a faint fatty odor and a sharp astringent taste. When placed on the tongue it produces a sense of numbness but at the same time if undiluted it is corrosive. It acquires a brownish tint on exposure. This

drug enjoys the recognition by the U. S. Public Health Service as the best choice in the eradication of certain types of intestinal parasites. It is particularly effective against ascaris and dwarf tapeworm and is also used for hookworm, pinworm, and whipworm. It rarely, if ever, produces toxic symptoms and it is far superior to such inefficient and dangerous substances as santonin. Hexylresorcinol must be administered in such form that it will not come in contact with the oral tissues. Sharp & Dohme supply it in special gelatin-coated pills under the name "Crystoids Anthelmintic" in both large and small sizes for humans, and also a veterinary package particularly for dogs. The average dose is 1 Gm.

Injectio Digitalis

Digitalis Injection (Digitalis Ampuls). This is a new U. S. P. Digitalis product which is a sterile solution of one or more of the glycosides of digitalis in water for injection.

Injectio Mercurophyllinae

Mercurophylline Injection. This is commonly known as "Mercupurin" and is sold by Campbell Products, Inc. It is a sterile solution in water for injection of a complex organic mercurial and theophylline in approximately molecular proportions. It is a clear, faintly yellow, odorless liquid and has a slightly alkaline reaction. Mercurophylline Injection is a potent diuretic, best administered by the intravenous route, although also employed intramuscularly. The product supplied by Campbell Products contains in each cc. about 0.1 Gm. of the mercury compound and 40 mg. of theophylline, which is the average intramuscular dose.

Ligamentum Carbasi Absorbens

Gauze Bandage (Roller Gauze Bandage). It is prepared from absorbent gauze in various widths and lengths. Each bandage is one continuous piece tightly rolled and substantially free from loose threads and ravelings. Gauze Bandage must be sterile and protected from contamination.

Liquor Chloridorum Trium Isotonicus

Isotonic Solution of Three Chlorides (Ringer's Solution). This is an aqueous solution containing sodium, potassium and calcium chlorides in approximately the ratio and concentration found in blood serum. It is claimed to be more compatible with blood and tissue than "normal saline" and it has a variety of uses including intravenous

injection, either alone or as a solvent, and the preparation of wet dressings and pastes for wounds.

There are three forms:

No. 1—Non-sterile.

No. 2—Sterile, not for parenteral use.

No. 3—Sterile, for parenteral use.

Liquor Chloroazodini

Solution of Chloroazodin. This is a solution of chloroazodin (0.26 per cent.) in triacetin. It is a clear, yellow, somewhat oily liquid. It should not come in contact with metals. Aqueous solutions of chloroazodin may also be used but they are not as stable as the above. Wallace and Tiernan supply this as Azochloramide in Triacetin.

Liquor Iodi

Solution of Iodine. This is an aqueous solution of iodine (2 per cent.) and sodium iodide (2.4 per cent.) similar to Mild Tincture of Iodine except that it contains no alcohol and dries more slowly.

Liquor Sodii Citratis Anticoagulans

Anticoagulant Solution of Sodium Citrate. This is a solution containing sodium citrate (2.5 per cent.) dissolved in isotonic solution of sodium chloride. It is used to prevent coagulation of the blood, which it accomplishes by calcium precipitation.

There are three forms:

No. 1—Non-sterile.

No. 2—Sterile, not for parenteral use.

No. 3—Sterile, for parenteral use.

The latter is added to blood before transfusion.

Liquor Tribromoaethanolis

Solution of Tribromoethanol (Solution of Tribromoethyl Alcohol). This is available under the proprietary name "Avertin with Amylene Hydrate" and is distributed by the Winthrop Chemical Co. It is a 100 per cent. solution (w/v) of Tribromoethanol in Amylene Hydrate. It is employed as a basal anesthetic by rectal administration and is supplemented by inhalation anesthetics where complete anesthesia is desired. It possesses the advantage of not producing irritation of the membranes of the respiratory tract as well as lessening the danger of post-operative nausea and vomiting. The dose is 0.06 cc. for each Kg. of body weight with a maximum of 8 cc. for women and 10 cc. for men. It is diluted before use to about a 2.5 per cent. solution using water, and it should be tested with Congo Red for hydro-

bromic acid and acetaldehyde before it is used. In the presence of these impurities it must be discarded.

Magnesii Trisilicas

Magnesium Trisilicate. This is a fine white, odorless, tasteless powder free from grittiness. It is almost insoluble in water and alcohol and is readily decomposed by mineral acids.

This substance is administered as a gastric antacid. It differs from soluble alkalies in that it reacts only with free acid and does not induce alkalosis. It is mildly laxative in its action. The average dose is 15 Gm. and the U. S. P. XII also includes tablets of this drug.

Menadionum

Menadione (2-Methyl-naphthoquinone; 2-Methyl-1, 4-naphthoquinone). This is a bright yellow crystalline powder, nearly odorless, and insoluble in water. It is decomposed by sunlight.

This substance has the activity of vitamin K, although it is not identical chemically with natural vitamin K. It is metabolized in the liver to form prothrombin, which is an essential factor in the chain of events leading to coagulation of the blood. It is used in preventing and treating hemorrhagica neonatorum and is given also by injection to those adults who by reason of biliary insufficiency do not assimilate the natural vitamin K taken in the diet.

Menadione is administered both orally and by injection in oil solution. It is available under a variety of names, e. g.:

"Kayquinone"—Abbott.

"Proklot"—Lilly.

"Thyloquinone"—Squibb.

Tablets are included in the U. S. P. XII and the average dose is 1 mg.

Mersalyl

Mersalyl. This was formerly available under the name "Salyrgan" Winthrop. It is an organic mercurial diuretic. It is now available only in combination with theophylline, which so modifies its properties as to prevent the tissue damage at the site of injection occasionally experienced with the drug alone. This product is given official recognition in the U. S. P. XII under the title *"Injectio Mersalylis et Theophyllinae."* In this form the average dose contains 0.2 Gm. of Mersalyl and 0.1 Gm. of Theophylline and it is given intramuscularly.

Nebula Epinephrinae Hydrochloridi

Epinephrine Hydrochloride Spray. This is a 1:100 solution of epinephrine hydrochloride, ten times the strength of the official *"Liquor."* It is used to relax bronchial spasm in acute attacks of asthma when it is administered by having the patient use an atomizer and inspiring it into the bronchi. The minimal amount required to give effective relief should be employed.

Neostigminae Bromidum

Neostigmine Bromide.

Neostigminae Methylsulfas

Neostigmine Methylsulfate.

These drugs are sold by Hoffmann-La Roche as "Prostigmine Bromide" and "Prostigmine Methylsulfate."

Their action is similar to that of physostigmine, but they produce less of a myotic action on the eye. They are employed to produce stimulation of peristalsis and relieve atony of the bladder following an operation, and they also are used for providing some symptomatic relief in myosthenia gravis. The bromide, which is the least hygroscopic of the various salts, is official also in the form of tablets and the oral dose is 15 mg. The methylsulfate is employed in *"Injectio Neostigminae Methylsulfatis"* and the subcutaneous dose is 0.5 mg., which is frequently repeated.

Nicotinamidum

Nicotinamide (Nicotinic Acid Amide, Niacinamide). The amide of nicotinic acid is equally as active as nicotinic acid in its effect as an anti-pellagra vitamin. It is preferred to the free acid since it does not produce as much vasomotor disturbance (flushing, itching, etc.). Tablets are also official in the U. S. P. XII and the average dose is 25 mg.

Oleum Hippoglossi

Halibut Liver Oil. This is well known in medicine as a good source of vitamins A and D. It is required to contain not less than 60,000 units of A per Gm. and not less than 600 units of D.

The average daily prophylactic dose is 0.1 cc. *Capsules* are also official and these may contain either 5000 units of A or 25,000 units each. The latter are used in treating serious vitamin A deficiency such as nyctalopia and also as a prophylactic for night aviators. According to a government ruling to conserve vitamin A only these and *Capsules of Oleovitamin A* are permitted to contain more than 5000 units each.

Ouabainum

Ouabain (G-Strophanthin). This is a glycoside obtained from the seeds of *Acocanthera Ouabaio,* commonly known as *Strophanthus gratus.* It is a white, odorless, crystalline substance stable in air but affected by light. Therapeutically, it produces a digitalis-like effect on the heart and it is similar to Strophanthin. It is claimed to be more quickly excreted than Digitalis and to have a lesser tendency to cumulative action.

The *Injection* is also official and the dose is 0.25 mg.

Pamaquinae Naphthoas

Pamaquine Naphthoate (Aminoquin Naphthoate). This is commonly known under the Winthrop name "Plasmochin." It is a yellow to orange-yellow, odorless powder, tasteless or nearly so, and having a local anesthetic effect when placed on the tongue. It is used as an antimalarial but it has the advantage over quinine in that it destroys the sexual forms of the parasite. It is to be considered more as an important adjuvant to quinine rather than as a substitute for it. Because of possible toxic action it is not applicable for prolonged treatment for prophylaxis and it should only be given under medical supervision. The dose is 20 mg.

Perpolitiones Oryzae

Rice Polishings. This has been considered under the *"Extract,"* which see.

Picrotoxinum

Picrotoxin. This is a mixture of neutral principles obtained from a species of fish berry, *Anamirta paniculata.* It occurs as flexible, shining prismatic crystals or as a microcrystalline powder. It is odorless and stable in air but is affected by light. It is recognized officially because of its value as an antidote for barbiturate poisoning, for which it is quite effective. The dose is 2 mg. or more depending on the severity of the barbiturate poisoning. The *Injection* is likewise official.

Plasma Humanum Normale Citratum

Citrated Normal Human Plasma (Normal Human Plasma). This is the sterile plasma obtained by pooling approximately equal amounts of the liquid portion of citrated whole blood from eight or more humans who have been certified as free from any disease which is transmissible by transfusion at the time of drawing the blood. It may be dispensed in liquid, frozen or specially dried form.

Human plasma is most useful in treating serious cases of shock and burns. It is far superior to salt or glucose solutions for such purposes since the latter by reason of low molecular weight are not retained in the vascular system, whereas plasma is not rapidly lost and serves to maintain both blood volume as well as provide the much needed protein constituents. The shelf life of the product in dried (lyophile Sharp & Dohme) form is about five years, while in liquid or frozen state it is stable for much shorter periods. The average dose is 500 cc., given intravenously, but in severe cases this may be greatly exceeded.

Quinacrinae Hydrochloridum

Quinacrine Hydrochloride (Mepacrine Hydrochloride). This is available under the name "Atabrine" as sold by the Winthrop Chemical Co. It is a bright yellow crystalline powder, odorless, but with a bitter taste. It is used as an antimalarial both in the treatment of this infestation as well as its prophylaxis. As in the case of quinine, its chief action is on the asexual forms. The average dose is 0.1 Gm. Larger doses are frequently toxic.

Riboflavinum

Riboflavin (Lactoflavin, Vitamin B_2, Vitamin G). This is an orange yellow, crystalline powder having a slight odor. When dry it is not appreciably affected by diffused light, but in solution, especially in the presence of alkalies, it deteriorates on exposure to light. It is practically insoluble in water but more soluble in physiological solution of sodium chloride.

It is used in deficiencies of the B-complex such as cases of pellagra which are resistant to nicotinic acid therapy. Frank riboflavin deficiencies such as cheilosis also respond quickly to its use.

The dose is 5 mg. and *Tablets* are official.

Serum Humanum Normale

Normal Human Serum (Human Serum). It is the sterile serum obtained by pooling approximately equal amounts of the liquid portion of coagulated whole blood from eight or more humans who have been certified as free from any disease which is transmissible by transfusion at the time of drawing the blood. It may be dispensed as liquid serum or in a dried condition. The average dose is 500 cc., given intravenously.

This product has uses similar to that of Citrated Normal Human Plasma. Medical opinion is somewhat divided on the relative merit of the two.

Serum Immune Morbillosi Humanum

Human Measles Immune Serum (Measles Convalescent Serum).

Serum Immune Scarlatinae Humanum

Human Scarlet Fever Immune Serum (Scarlet Fever Convalescent Serum).

These represent the sera of persons surviving an attack of the respective diseases. They are used both in the treatment and prophylaxis of the particular infection.

The prophylactic dose is 10 cc. and the therapeutic dose 20 cc. given parenterally.

Sulfapyridinum

Sulfapyridine.

Sulfapyridinum Sodicum Sterile

Sterile Sulfapyridine Sodium. It is a white, odorless, crystalline powder, which is soluble in water. On exposure to humid air it absorbs carbon dioxide with the liberation of sulfapyridine, becoming incompletely soluble in water. It is used for the preparation of solutions for intravenous use. If given subcutaneously or intramuscularly its high degree of alkalinity causes necrosis and sloughing of the tissue.

Sulfarsphenamina

Sulfarsphenamine. It is a yellow powder, soluble in water, odorless, or with a slight odor resembling SO_2. It is slowly oxidized on exposure, becoming darker in color and more toxic. It is used as an antisyphilitic, and since it may be given by intramuscular injection it is more suited to office practice and the treatment of children than either Arsphenamine or Neoarsphenamine which require intravenous technique. The average dose (intramuscular) is 0.45 Gm.

Sulfathiazolum

Sulfathiazole.

Sulfobromophthaleinum Sodicum

Sulfobromophthalein Sodium. This is commonly known under the name "Bromsulphalein Soluble" as sold by Hynson, Westcott & Dunning. It is a white crystalline powder. It is odorless and has a

bitter taste. It is used in the form of an injection, which is likewise official, to test liver function.

Syrupus Glycyrrhizae

Syrup of Glycyrrhiza. This vehicle was official in N. F. VI but has been adopted by the new U. S. P. XII.

Tetracainae Hydrochloridum

Tetracaine Hydrochloride. This is sold by the Winthrop Chemical Co. under the brand name "Pontocaine Hydrochloride." It is a fine, white, crystalline, odorless powder, having a slightly bitter taste followed by a sense of numbness. It is employed as a local anesthetic and is used in 0.5 per cent. solution in the eye, 2 per cent. in the nose and on other mucous membranes and a specially prepared 1 per cent. solution is used for spinal anesthesia.

Tetrachloroaethylenum

Tetrachloroethylene (Perchloroethylene, Ethylene Tetrachloride). A clear, colorless, mobile liquid having a characteristic ethereal odor. It is not inflammable. It slowly decomposes on exposure to light and metals in the presence of moisture.

Tetrachloroethylene is used in the removal of both ascaris (round worm) and ancylostoma (hook-worm) in both man and animals. It is almost always administered in soft elastic gelatin capsules which are also official in the U. S. P. XII. The average dose for humans is 3 cc., while the dose for animals varies in accordance with the species. The Parke-Davis product "Nema" capsules represents a widely sold Tetrachloroethylene capsule.

Theobromina et Sodii Acetas

Theobromine and Sodium Acetate. It is a white, crystalline powder which is practically odorless. It is somewhat hygroscopic and upon exposure to air it gradually absorbs carbon dioxide with the liberation of free theobromine.

It is used both as a diuretic and a myocardial stimulant and is preferred to theobromine alone since it is better tolerated by the stomach. It is preferred to Theobromine Sodium Salicylate since the latter occasionally irritates the stomach and kidneys.

Winthrop supply this drug as "Agurin." The average dose is 0.5 Gm. and *Capsules* are also official in the U. S. P. XII.

Totaquina

Totaquine ("Quinium Quinetum"). This is a mixture of alkaloids from cinchona bark. It a yellowish white to pale brown powder having a bitter taste. Totaquine is used as a cheap substitute for quinine but it now comes under the emergency regulations restricting quinine for use solely as an antimalarial.

Toxoidum Tetanicum

Tetanus Toxoid. This monograph includes also the Alum Precipitated form as well. Both are employed for the purpose of developing an active immunity toward tetanus.

Tribromoaethanol

Tribromoethanol. This is a white, crystalline powder with a slight aromatic odor and taste. It is unstable in air. Both aqueous and alcoholic solutions decompose on exposure to light. It is sparingly soluble in water but very soluble in amylene hydrate. It is used as a basal anesthetic given intrarectally (see *Liquor Tribromoaethanolis*) and also in aqueous solution for instillation in the ureter as a relaxant prior to the manipulative removal of ureteral calculi. The crystals to be used for preparing aqueous solutions for this latter use are available from Winthrop under the title "Avertin Crystals."

Trichloroaethylenum

Trichloroethylene. This is a clear, colorless, mobile liquid having a characteristic odor resembling that of chloroform. It is decomposed by light in the presence of moisture. It is given by inhalation in trigeminal neuralgia and it is used in threatened attacks of angina pectoris. Lederle supplies this in 1 cc. frangible tubes which make rapid administration quite simple.

Unguentum Aethylis Aminobenzoatis

Ethyl Aminobenzoate Ointment. This is a 5 per cent. ointment in a base consisting of White Wax, Wool Fat, and White Petrolatum. It is employed in minor burns and other skin conditions requiring a mildly anesthetic application.

Urea

Urea (Carbamide). This is a colorless to white crystalline substance which is odorless and has a cooling, saline taste. It is freely soluble in water. It is employed as a diuretic and also in urea pastes

and wet dressings for the treatment of old sores and ulcers since it dissolves necrotic tissue and pus.

The following is a comprehensive list of U. S. P. XII additions:

U. S. P. XII ADDITIONS

Latin Title	English Title
Acidum Aminoaceticum	Aminoacetic Acid
Æthylis Carbamas	Ethyl Carbamate
Amaranthum	Amaranth
Amyleni Hydras	Amylene Hydrate
Aqua pro Injectione	Water for Injection
Bentonitum	Bentonite
Butacainæ Sulfas	Butacaine Sulfate
Butylis Aminobenzoas	Butyl Aminobenzoate
Calcii Mandelas	Calcium Mandelate
Calx Sodica	Soda Lime
Capsulæ Ammonii Chloridi	Ammonium Chloride Capsules
Capsulæ Carbonei Tetrachloridi	Carbon Tetrachloride Capsules
Capsulæ Digitalis	Digitalis Capsules
Capsulæ Diphenylhydantoini Sodici	Diphenylhydantoin Sodium Capsules
Capsulæ Ferri et Ammonii Citratum	Iron and Ammonium Citrates Capsules
Capsulæ Olei Chenopodii	Oil of Chenopodium Capsules
Capsulæ Olei Hippoglossi	Halibut Liver Oil Capsules
Capsulæ Oleovitaminæ A	Oleovitamin A Capsules
Capsulæ Oleovitaminæ A et D Concentratæ	Concentrated Oleovitamin A and D Capsules
Capsulæ Pentobarbitali Sodici	Pentobarbital Sodium Capsules
Capsulæ Tetrachloroæthyleni	Tetrachloroethylene Capsules
Capsulæ Theobrominæ et Sodii Acetatis	Theobromine and Sodium Acetate Capsules
Carbarsonum	Carbarsone
Carbasus Absorbens	Absorbent Gauze
Carbasus Absorbens Adhæsivus	Adhesive Absorbent Gauze
Carbasus Absorbens Sterilis	Sterile Absorbent Gauze
Chloroazodinum	Chloroazodin
Chorda Serica Chirurgicalis	Surgical Silk
Chorda Serica Chirurgicalis Sterilis	Sterile Surgical Silk
Dihydromorphinoni Hydrochloridum	Dihydromorphinone Hydrochloride
Diphenylhydantoinum Sodicum	Diphenylhydantoin Sodium
Elixir Phenobarbitali	Elixir of Phenobarbital
Emplastrum Adhæsivum Sterile	Sterile Adhesive Plaster
Ergonovinæ Maleas	Ergonovine Maleate
Ergotaminæ Tartras	Ergotamine Tartrate
Estradiolis Benzoas	Estradiol Benzoate
Estronum	Estrone
Eucatropinæ Hydrochloridum	Eucatropine Hydrochloride

Latin Title	English Title
Extractum Perpolitionum Oryzæ	Extract of Rice Polishings
Ferri Sulfas Exsiccatus	Exsiccated Ferrous Sulfate
Gelatum Alumini Hydroxidi	Aluminum Hydroxide Gel
Gelatum Alumini Hydroxidi Siccum	Dried Aluminum Hydroxide Gel
Globulinum Immune Humanum	Human Immune Globulin
Glycerylis Triacetas	Glyceryl Triacetate
Hexylresorcinol	Hexylresorcinol
Injectiones	Injections
Injectio Bismuthi et Potassii Tartratis	Bismuth and Potassium Tartrate Injection
Injectio Bismuthi Subsalicylatis	Bismuth Subsalicylate Injection
Injectio Caffeinæ et Sodii Benzoatis	Caffeine and Sodium Benzoate Injection
Injectio Calcii Gluconatis	Calcium Gluconate Injection
Injectio Dextrosi	Dextrose Injection
Injectio Dextrosi et Sodii Chloridi	Dextrose and Sodium Chloride Injection
Injectio Digitalis	Digitalis Injection
Injectio Emetinæ Hydrochloridi	Emetine Hydrochloride Injection
Injectio Epinephrinæ Hydrochloridi	Epinephrine Hydrochloride Injection
Injectio Hydrargyri Salicylatis	Mercuric Salicylate Injection
Injectio Mercurophyllinæ	Mercurophylline Injection
Injectio Mersalylis et Theophyllinæ	Mersalyl and Theophylline Injection
Injectio Neostigminæ Methylsulfatis	Neostigmine Methylsulfate Injection
Injectio Ouabaini	Ouabain Injection
Injectio Phenolsulfonphthaleini	Phenolsulfonphthalein Injection
Injectio Picrotoxini	Picrotoxin Injection
Injectio Quininæ Hydrochloridi et Æthylis Carbamatis	Quinine Hydrochloride and Ethyl Carbamate Injection
Injectio Strophanthini	Strophanthin Injection
Injectio Sulfobromophthaleini Sodici	Sulfobromophthalein Sodium Injection
Injectio Theophyllinæ Æthylenediaminicæ	Theophylline Ethylenediamine Injection
Ligamentum Carbasi Absorbens	Gauze Bandage
Liquor Amaranthi	Solution of Amaranth
Liquor Chloridorum Trium Isotonicus	Isotonic Solution of Three Chlorides
Liquor Chloroazodini	Solution of Chloroazodin
Liquor Iodi	Solution of Iodine
Liquor Sodii Citratis Anticoagulans	Anticoagulant Solution of Sodium Citrate
Liquor Tribromoæthanolis	Solution of Tribromoethanol
Magnesii Trisilicas	Magnesium Trisilicate
Menadionum	Menadione
Mersalyl	Mersalyl
Nebula Epinephrinæ Hydrochloridi	Epinephrine Hydrochloride Spray

Latin Title	English Title
Neostigminæ Bromidum	Neostigmine Bromide
Neostigminæ Methylsulfas	Neostigmine Methylsulfate
Nicotinamidum	Nicotinamide
Oleum Hippoglossi	Halibut Liver Oil
Ouabainum	Ouabain
Pamaquinæ Naphthoas	Pamaquine Naphthoate
Perpolitiones Oryzæ	Rice Polishings
Picrotoxinum	Picrotoxin
Plasma Humanum Normale Citratum	Citrated Normal Human Plasma
Potassii Chloridum	Potassium Chloride
Quinacrinæ Hydrochloridum	Quinacrine Hydrochloride
Quininæ Hydrochloridum	Quinine Hydrochloride
Riboflavinum	Riboflavin
Serum Humanum Normale	Normal Human Serum
Serum Immune Morbillosi Humanum	Human Measles Immune Serum
Serum Immune Scarlatinæ Humanum	Human Scarlet Fever Immune Serum
Sodii Sulfis Exsiccatus	Exsiccated Sodium Sulfite
Sulfapyridinum	Sulfapyridine
Sulfapyridinum Sodicum Sterile	Sterile Sulfapyridine Sodium
Sulfarsphenamina	Sulfarsphenamine
Sulfathiazolum	Sulfathiazole
Sulfobromophthaleinum Sodicum	Sulfobromophthalein Sodium
Syrupus Glycyrrhizæ	Syrup of Glycyrrhiza
Tabellæ Acetophenetidini	Acetophenetidin Tablets
Tabellæ Acidi Acetylsalicylici	Acetylsalicylic Acid Tablets
Tabellæ Acidi Ascorbici	Ascorbic Acid Tablets
Tabellæ Acidi Nicotinici	Nicotinic Acid Tablets
Tabellæ Atropinæ Sulfatis	Atropine Sulfate Tablets
Tabellæ Barbitali	Barbital Tablets
Tabellæ Barbitali Sodici	Barbital Sodium Tablets
Tabellæ Cascaræ Sagradæ	Cascara Sagrada Tablets
Tabellæ Chiniofoni	Chiniofon Tablets
Tabellæ Codeinæ Phosphatis	Codeine Phosphate Tablets
Tabellæ Codeinæ Sulfatis	Codeine Sulfate Tablets
Tabellæ Colchicinæ	Colchicine Tablets
Tabellæ Digitalis	Digitalis Tablets
Tabellæ Dihydromorphinoni Hydrochloridi	Dihydromorphinone Hydrochloride Tablets
Tabellæ Ephedrinæ Sulfatis	Ephedrine Sulfate Tablets
Tabellæ Ergonovinæ Maleatis	Ergonovine Maleate Tablets
Tabellæ Ergotaminæ Tartratis	Ergotamine Tartrate Tablets
Tabellæ Extracti Fellis Bovis	Extract of Ox Bile Tablets
Tabellæ Ferri Sulfatis	Ferrous Sulfate Tablets
Tabellæ Magnesii Phosphatis Tribasici	Tribasic Magnesium Phosphate Tablets
Tabellæ Magnesii Trisilicatis	Magnesium Trisilicate Tablets
Tabellæ Menadioni	Menadione Tablets

Latin Title	English Title
Tabellæ Methenaminæ	Methenamine Tablets
Tabellæ Morphinæ Sulfatis	Morphine Sulfate Tablets
Tabellæ Neocinchopheni	Neocinchophen Tablets
Tabellæ Neostigminæ Bromidi	Neostigmine Bromide Tablets
Tabellæ Nicotinamidi	Nicotinamide Tablets
Tabellæ Pentobarbitali Sodici	Pentobarbital Sodium Tablets
Tabellæ Phenobarbitali	Phenobarbital Tablets
Tabellæ Phenobarbitali Sodici	Phenobarbital Sodium Tablets
Tabellæ Potassii Chloridi	Potassium Chloride Tablets
Tabellæ Quinacrinæ Hydrochloridi	Quinacrine Hydrochloride Tablets
Tabellæ Quinidinæ Sulfatis	Quinidine Sulfate Tablets
Tabellæ Quininæ Sulfatis	Quinine Sulfate Tablets
Tabellæ Riboflavini	Riboflavin Tablets
Tabellæ Saccharini Sodici	Saccharin Sodium Tablets
Tabellæ Sodii Nitritis	Sodium Nitrite Tablets
Tabellæ Sodii Salicylatis	Sodium Salicylate Tablets
Tabellæ Strychninæ Sulfatis	Strychnine Sulfate Tablets
Tabellæ Sulfanilamidi	Sulfanilamide Tablets
Tabellæ Sulfapyridini	Sulfapyridine Tablets
Tabellæ Sulfathiazoli	Sulfathiazole Tablets
Tabellæ Theophyllinæ	Theophylline Tablets
Tabellæ Theophyllinæ Æthylenediaminicae	Theophylline Ethylenediamine Tablets
Tabellæ Theophyllinæ et Sodii Acetatis	Theophylline and Sodium Acetate Tablets
Tabellæ Thiaminæ Hydrochloridi	Thiamine Hydrochloride Tablets
Tabellæ Thyroidei	Thyroid Tablets
Tetracainæ Hydrochloridum	Tetracaine Hydrochloride
Tetrachloroæthylenum	Tetrachloroethylene
Theobromina et Sodii Acetas	Theobromine and Sodium Acetate
Totaquina	Totaquine
Toxoidum Tetanicum	Tetanus Toxoid
Tribromoæthanol	Tribromoethanol
Trichloroæthylenum	Trichloroethylene
Unguentum Æthylis Aminobenzoatis	Ethyl Aminobenzoate Ointment
Unguentum Flavum	Yellow Ointment
Urea	Urea

THE SEASONS AS A FACTOR IN THE ACTIVITY OF DIGITALIS

By James A. Bone, M. S., M. D.

SINCE the appearance of Burn's work (1) (1937) on the activity of the tincture of digitalis determined at different times, or during the various seasons of the year, no work has appeared on this subject. It was considered worthwhile to study this problem as an introduction to a general study of drugs under this heading.

Our plan of procedure was as follows: The method used is that described by McGuigan and McGuigan (2). Dogs were anesthetized with Pentobarbital, 35 mg. per kg. intraperitoneally. The undiluted tincture of digitalis was injected slowly into the femoral vein at the rate of 0.1 cc. per kg. every five minutes, until the heart stopped. We believe Pentobarbital is the best anesthetic since the anesthesia is kept even and constant. The tincture was prepared by using the ratio of 0.745 gm. of the Reference Powder, macerated for twenty-four hours, in 10 cc. of 70 per cent. alcohol (3). These experiments were run weekly for fifty-two weeks, and in many cases, we took the averages of two or three dogs per week. All the animals were in an excellent state of health, as near the same age as possible, and were not kept in captivity after bringing to the laboratory. We think incarceration except under rare conditions may militate against uniform results.

The following tables show the complete data. We have arranged and tabulated our results according to the seasons.

Results

TABLE 1

SUMMER

Date Week of	Dogs Used No.	Sex	Wt. of Dog in Kg.	No. of Injections	Total Dose mg. per Kg. (Corrected)	Units per Kg.
6/23/40	1	♂	20.0	12.0	120.0	1.20
	2	♂	10.0	6.0	60.0	0.60
	3	♀	15.0	6.0	60.0	0.60
	4	♀	15.0	8.0	80.0	0.80
6/30/40	5	♂	14.0	6.0	60.0	0.60
	6	♂	27.0	10.0	100.0	1.00

Date Week of	Dogs Used No.	Sex	Wt. of Dog in Kg.	No. of Injections	Total Dose mg. per Kg. (Corrected)	Units per Kg.
7/ 7/40	7	♀	24.0	7.0	70.0	0.70
	8	♀	12.0	11.0	110.0	1.10
7/14/40	9	♂	6.0	9.0	90.0	0.90
	10	♀	10.0	7.0	70.0	0.70
7/21/40	11	♂	6.0	6.0	60.0	0.60
	12	♀	14.0	8.0	80.0	0.80
7/28/40	13	♂	7.0	6.0	60.0	0.60
	14	♂	5.8	8.0	80.0	0.80
8/ 4/40	15	♂	11.0	7.0	70.0	0.70
	16	♀	18.0	9.0	90.0	0.90
8/11/40	17	♂	7.0	9.0	90.0	0.90
	18	♀	13.0	15.0	150.0	1.50
8/18/40	19	♂	20.0	6.0	60.0	0.60
	20	♂	21.0	10.0	100.0	1.00
8/25/40	21	♂	8.8	8.0	80.0	0.80
	22	♂	13.0	12.0	120.0	1.20
9/ 1/40	23	♀	7.0	8.0	80.0	0.80
	24	♀	20.0	14.0	140.0	1.40
9/ 8/40	25	♂	30.0	8.0	80.0	0.80
	26	♂	20.0	14.0	140.0	1.40
9/15/40	27	♀	20.0	8.0	80.0	0.80
	28	♀	14.0	14.0	140.0	1.40
	AVERAGES		14.5	9.0	90.0	0.90

TABLE 2

AUTUMN

Date Week of	Dogs Used No.	Sex	Wt. of Dog in Kg.	No. of Injections	Total Dose mg. per Kg. (Corrected)	Units per Kg.
9/22/40	1	♀	30.0	14.0	140.0	1.40
	2	♂	20.0	8.0	80.0	0.80
	3	♂	17.5	11.0	110.0	1.10
9/29/40	4	♀	20.0	6.0	60.0	0.60
	5	♂	18.0	8.0	80.0	0.80
10/ 6/40	6	♂	30.4	8.0	80.0	0.80
	7	♀	23.0	6.0	60.0	0.60
10/13/40	8	♂	40.0	7.0	70.0	0.70
	9	♀	18.0	9.0	90.0	0.90
10/20/40	10	♀	10.0	8.0	80.0	0.80
	11	♀	14.0	12.0	120.0	1.20
10/27/40	12	♂	16.0	12.0	120.0	1.20
	13	♂	9.6	14.0	140.0	1.40
11/ 3/40	14	♀	16.0	8.0	80.0	0.80
	15	♂	10.0	10.0	100.0	1.00

Date Week of	Dogs Used No.	Sex	Wt. of Dog in Kg.	No. of Injections	Total Dose mg. per Kg. (Corrected)	Units per Kg.
11/10/40	16	♂	16.0	12.0	120.0	1.20
	17	♂	8.0	10.0	100.0	1.00
11/17/40	18	♀	14.0	8.0	80.0	0.80
	19	♀	10.0	10.0	100.0	1.00
11/24/40	20	♂	10.0	9.0	90.0	0.90
	21	♂	14.0	7.0	70.0	0.70
12/ 1/40	22	♂	9.0	6.0	60.0	0.60
	23	♂	7.0	6.0	60.0	0.60
12/ 8/40	24	♀	30.0	8.0	80.0	0.80
	25	♀	14.9	12.0	120.0	1.20
12/15/40	26	♀	8.0	6.0	60.0	0.60
	27	♀	11.0	6.0	60.0	0.60
	AVERAGES		15.1	8.9	89.0	0.89

TABLE 3

WINTER

Date Week of	Dogs Used No.	Sex	Wt. of Dog in Kg.	No. of Injections	Total Dose mg. per Kg. (Corrected)	Units per Kg.
12/22/40	1	♀	10.0	6.0	60.0	0.60
	2	♂	12.0	14.0	140.0	1.40
	3	♀	8.0	10.0	100.0	1.00
12/29/40	4	♂	30.0	6.0	60.0	0.60
	5	♂	20.0	6.0	60.0	0.60
1/ 5/40	6	♂	20.8	8.0	80.0	0.80
	7	♂	12.0	12.0	120.0	1.20
1/12/40	8	♀	20.0	13.0	130.0	1.30
	9	♀	8.0	9.0	90.0	0.90
1/19/40	10	♀	8.0	8.0	80.0	0.80
	11	♀	18.0	12.0	120.0	1.20
1/26/40	12	♂	6.0	6.0	60.0	0.60
	13	♀	8.0	8.0	80.0	0.80
2/ 2/40	14	♂	10.0	8.0	80.0	0.80
	15	♂	6.0	8.0	80.0	0.80
2/ 9/40	16	♂	40.0	8.0	80.0	0.80
	17	♀	20.0	10.0	100.0	1.00
2/16/40	18	♂	20.0	14.0	140.0	1.40
	19	♂	10.0	10.0	100.0	1.00
2/23/40	20	♀	18.0	10.0	100.0	1.00
	21	♀	6.0	8.0	80.0	0.80
3/ 2/40	22	♂	20.6	10.0	100.0	1.00
	23	♂	13.0	8.0	80.0	0.80
3/ 9/40	24	♀	30.0	12.0	120.0	1.20
	25	♂	13.0	14.0	140.0	1.40
3/16/40	26	♂	27.0	10.0	100.0	1.00
	27	♂	23.0	11.0	110.0	1.10
	AVERAGES		16.4	9.6	96.0	0.96

TABLE 4

SPRING

Date Week of	Dogs Used No.	Sex	Wt. of Dog in Kg.	No. of Injections	Total Dose mg. per Kg. (Corrected)	Units per Kg.
3/23/40	1	♂	20.0	7.0	70.0	0.70
	2	♂	13.0	8.0	80.0	0.80
	3	♂	12.0	6.0	60.0	0.60
3/30/40	4	♀	11.0	10.0	100.0	1.00
	5	♀	20.0	8.0	80.0	0.80
4/ 6/40	6	♂	20.0	10.0	100.0	1.00
	7	♀	24.0	8.0	80.0	0.80
4/13/40	8	♀	11.0	6.0	60.0	0.60
	9	♀	12.0	10.0	100.0	1.00
4/20/40	10	♀	12.0	10.0	100.0	1.00
	11	♂	8.0	6.0	60.0	0.60
4/27/40	12	♂	13.0	7.0	70.0	0.70
	13	♀	7.0	9.0	90.0	0.90
5/ 4/40	14	♂	10.0	12.0	120.0	1.20
	15	♂	8.0	12.0	120.0	1.20
5/11/40	16	♂	20.0	8.0	80.0	0.80
	17	♀	14.0	10.0	100.0	1.00
5/18/40	18	♀	20.0	10.0	100.0	1.00
	19	♀	10.0	8.0	80.0	0.80
5/25/40	20	♂	5.0	8.0	80.0	0.80
	21	♀	5.0	8.0	80.0	0.80
6/ 1/40	22	♀	30.4	8.0	80.0	0.80
	23	♀	23.0	12.0	120.0	1.20
6/ 8/40	24	♂	7.0	7.0	70.0	0.70
	25	♀	7.0	7.0	70.0	0.70
6/15/40	26	♀	20.0	8.0	80.0	0.80
	27	♂	10.0	12.0	120.0	1.20
	AVERAGES		13.8	8.7	87.0	0.87

Due to the many variable factors in the standardization of digitalis, assay to within 20 per cent. above or 20 per cent. below the standard is acceptable by the U. S. P. We think allowance should be made in most experimental work for error. In our results, the range of difference is insignificant.

We also ran a series of experiments in our laboratory to check our previous finding and find that we are correct in saying that it takes more than five times the quantity of 70 per cent. alcohol to kill the dog than is necessary for the assay of digitalis. Then when the dog dies, he dies from respiratory failure (3).

Summary and Conclusion

We used 109 dogs during the fifty-two (52) weeks and our averages are made from these:

Season	No. of Dogs	Mean Fatal Dose mg. per kg.	Standard Error
Spring	27	87.0	3.6
Summer	28	90.0	5.1
Autumn	27	89.2	4.8
Winter	27	96.0	4.8

An estimate of the significance of the differences appearing among the Seasonal Mean fatal doses may be obtained by examining the difference between the highest mean (96.0 mg. per kg. for Winter), and the lowest mean (87.0 mg. per kg. for Spring). This difference, 9.0, is less than twice 6.0, the standard error of the difference. Differences of this magnitude would be expected to occur as sampling errors about once in seven or eight trials. With means of the character observed in this work, a difference of nine would become statistically significant only as the sample size approached three times that (27) employed here.

It would appear that the Seasonal influence of digitalis activity in dogs is negligible.

We thank the Board of Trustees of the United States Pharmacopœial Convention for supplying the Digitalis Reference Powder, and Dr. T. A. LaSaine for his valuable assistance. Above all, we are grateful to the President of the College, Dr. Edward L. Turner, without whose interest and cooperation this work would not have been possible.

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WHAT CAME OUT OF BLODGETT'S HOTEL

By T. Swann Harding

The modest beginnings of some of our massive Federal buildings in Washington give us a better appreciation of the manner in which our country has developed in the past 150 years. From "Blodgetts Hotel" has come the Post Office Department and the Patent Office, the latter formerly including the now fully matured Department of Agriculture. The early struggles and difficulties of our lusty young nation help us, in these days of uncertainty, to fortify our confidence in a great and glorious future.

IN the very early days of Washington, D. C., the area extending from 7th and F Streets Northwest, out northward as far as the site of the Public Library at 7th and K, constituted the farm of John Orr. But in 1795 Blodgett's Hotel began to be built on E Street between 7th and 8th, the present site of the United States Tariff Commission Building.

Both the site and the architectural plans of the hotel formed prizes in a lottery scheme designed to promote the sale of building lots in the struggling Federal city. Doubtless George Washington himself was considerably interested, as he held some land out around Georgetown in a more or less speculative way, hoping for a rise in prices.

The entire space bounded by 7th, 8th, E and F streets Northwest does not form a very large city square. The present building, which completely fills it, measures only 204 by 300 feet. Blodgett's Hotel did not completely fill even the E street side of the square. In the hotel was a theatre wherein was staged the first theatrical performance ever put on in Washington.

Early in the nineteenth century the entire Federal Government was crowded into a single twenty-five-room building. By 1810, however, this crowding became intolerable so Blodgett's Hotel was purchased to relieve the congestion. The Government seems to have been taking over hotels and residence properties ever since. At this time the Post Office Department, the City Post Office and the Patent Office were moved into Blodgett's Hotel. There was good fishing at 14th and K, N. W.

Dr. William Thornton was then Commissioner of Patents. He was appointed about the beginning of the nineteenth century and served until his death in the late 1820's. In 1822 he received $1,500 a year for his services, his clerk received $1,000, his messenger $250, and that constituted his entire staff.

In 1814 when the British invaded Washington Blodgett's Hotel was the only Government building not burned down. It stood as a result of a personal appeal made by Dr. Thornton to Colonel Jones, who was in charge of the roving British conflagration squad. He insisted that since the building was devoted to the arts and sciences its valuable collection of models and records should not be destroyed and Colonel Jones finally agreed.

In 1836, however, during the incumbency of Henry Ellsworth, the building did burn. It caught fire on December 15 and ineffectual efforts to save it made by its staff delayed the arrival of professional fire fighters so long that it was totally destroyed. The records and models of the Patent Office, including those of Robert Fulton's *Clermont,* went up in smoke and flame.

The following quotation from a contemporary newspaper gives an idea of conditions in central Washington on April 21, 1836: "The ill-fated man who was thrown down by a hog opposite the General Post Office, on Thursday as mentioned in our last, died on Saturday from the severe injury he sustained, his skull being fractured by that infamous accident." Obviously the Department of Agriculture was seeking then to enter the building on four legs. It was Ellsworth, of course, who first established an agricultural section in the Patent Office.

It was also in 1836 that the Congress authorized the construction of a new Patent Office Building. This is the structure now occupied by the Civil Service Commission, the F Street side of which was completed by 1840. Commissioner Ellsworth was a little delayed in gaining occupancy because the building served temporarily as the quarters of the Smithsonian Institution.

But when he did get into the building he commented that it should serve the purposes of the Office for many years to come. Actually it was overcrowded by 1844. The east side of the building was therefore added by 1852, the west side by 1856, and the north or

G Street side was completed by 1867. The south portico was copied from the Parthenon in Athens and the building cost $3,000,000.

In 1849 the Department of the Interior was created. Thomas Ewing, its first secretary, established himself in a single room of the Patent Office in that year and shortly thereafter crowded about everything else out of the structure. Until this time the Office had been in the Department of State.

In 1862 the Department of Agriculture was organized in two basement rooms of this building, then occupied by the agricultural section of the Patent Office under Isaac Newton. The north hall of the building on the 9th Street side was long used for fairs and patriotic gatherings. President Lincoln's inaugural ball was held in it March 6, 1865.

Meanwhile part of the Patent Office had had to be housed across the street in the old building now occupied by the United States Tariff Commission. The south wing of this building, the part which occupied the site of Blodgett's Hotel on E Street, was started in 1839 and the F Street wing was begun about the time the south wing was finished. The Congress purchased the north side of the square in 1842 and work on the northern half of the building began in 1855.

The entire building was completed about 1866. Its exterior has undergone no remodeling since. The Roman-Corinthian style of architecture characterizes it and its architests were responsible for the plans of the Capitol itself. Marble from Maryland and from New York quarries was used. The stairways are architecturally remarkable. The interior walls are twenty inches and the exterior walls four feet thick.

In one of the buildings on the 7th Street side, demolished to make room for the structure, Samuel F. B. Morse opened and operated the first public telegraph office in the United States. He sent his famous "What hath God wrought" message out from there on April 1, 1845. The oldest telegraph office in the city still rents quarters on the F Street side of the building west of the City Post Office substation.

Until 1897 the Post Office Department and the City Post Office were located in this building. John Wanamaker occupied the second floor southeast corner suite when he was Postmaster General. Between 1897 and 1917 the General Land Office of the Department of the Interior was housed in the building, part of which had also long been occupied by portions of the Patent Office.

In April, 1917, General Enoch Crowder, Provost Marshal General of the Army, maintained the National Selective Service Board in the building. After 1918 General John J. Pershing prepared his final reports as Commander-in-Chief of the American Expeditionary Forces in the same quarters.

The building is at present occupied by the United States Tariff Commission, part of the United States Employees' Compensation Commission and of the Civil Service Commission, and a branch of the City Post Office. Since 1937 the structure has officially been the Tariff Commission Building though many hitherto and still call it the Old Land Office Building.

Via the Patent Office both these old buildings have a sort of ancestral relationship to the Department of Agriculture. In 1850, according to Henry Adams, "the white marble columns and fronts of the Post Office and Patent Office faced each other, like white Greek temples in the abandoned gravel pits of a deserted Syrian city." They are still there, but the gravel pits are gone, nor is the city exactly deserted, come to think of it.

SOLID EXTRACTS

Items of Scientific Interest Gathered From Many Sources

The American Can Company has announced a method for making cans out of fiber. Most interesting is the claim that the same machinery formerly used for tin cans will serve in processing this fiber. Such an announcement is of great importance to a large number of manufacturers who package dry products such as drugs, spices and cosmetics. By this means a changeover from tin may be made without redesign of the package which from the standpoint of consumer acceptance is an important factor.

AJP

From casein, extracted from milk, National Dairy Products is manufacturing a new and important product known as Aralac. Put forth two years ago as a substitute for rabbit fur in hats, it is also used in place of down in bedding and furniture and as a hair-end wrapper in milady's permanent wave. Now it is on its way to the public as a yarn for textiles.

Chemically it is like wool or mohair and has their characteristics of warmth and resilience. But Aralac is not to take their place entirely, rather it is to be blended with wool, mohair, cotton, rayon or fur. Demand far exceeds the supply and the monthly production quota will soon be 800,000 pounds.

AJP

Ninety years ago Herman Frasch was born, destined to devise the sulfur mining method for which he became eminent among scientists. Many, however, overlook or are entirely ignorant of his connection with pharmacy, which culminated with his ownership of a drug store at 716 Race Street, in Philadelphia.

It is interesting to note the pride with which his successor, one Ernest Herrmann, advertises his acquisition of Frasch's store in November, 1876. The wording of the handbill, a copy of which is among the possessions of the *American Journal of Pharmacy,* is as follows:

> The undersigned having purchased from Mr. Herman Frasch his pharmacy at No. 716 Race Street, Philadelphia, opposite Franklin Square, is prepared to attend to those and others who have heretofore given this Pharmacy their patronage.
>
> The care and accuracy for which this establishment is known, shall be continued, and as I have been connected with Mr. Frasch in the charge of his pharmaceutical department for a number of years, feel confident that I am prepared to give satisfaction. I shall continue to dispense nothing but pure Drugs and Pharmaceutical preparations; also keep constantly on hand a full line of perfumery and toilet requisites.
>
> Physician's Prescriptions compounded with extreme care at all hours day or night.
>
> Respectfully,
>
> ERNEST HERRMANN.

AJP

The National Cotton Council of America releases these facts which are interesting to pharmacists, whose dealing in cottonseed oil is traditional:

1,400 million pounds of cotton seed are consumed annually.

A ton of crushed cotton seed yields about 300 pounds of crude cottonseed oil.

Each acre of cotton produces an average of 360 pounds of seed.

Cottonseed oil margerine, per pound, will provide about 3300 calories, and usually is fortified with at least 9000 units of vitamin A.

AJP

Believe-it-or-not Ripley claims that the oldest drug store in the world is the Franciscan Apothecary Shop in Ragusa, Yugoslavia. He states that it has been doing business for 635 years and its doors have never been closed since 1307. And we thought, along with a lot of others, that enterprising drugstore owners in the central portions of large cities who threw away their keys and boasted of uninterrupted twenty-four-hour service represented the apex of modernity.

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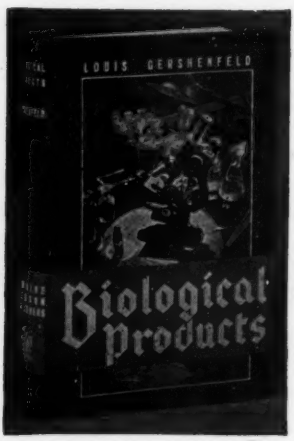

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